

**PATENT APPLICATION**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q85964

Umberto MARAZZI, et al.

Appln. No.: 10/522,893

Group Art Unit: 3754

Confirmation No.: 6717

Examiner: Stephanie E. TYLER

Filed: February 1, 2005

For: A FLUID-DISPENSING CIRCUIT WITH CHECK VALVES

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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**I. REAL PARTY IN INTEREST**

The real party in interest is CPS COLOR EQUIPMENT SPA, by virtue of an assignment recorded by the Assignment Branch of the U.S. Patent and Trademark Office on November 16, 2006, at Reel 018526, Frame 0220.

**II. RELATED APPEALS AND INTERFERENCES**

To the knowledge and belief of Appellant, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

### **III. STATUS OF CLAIMS**

Claims 13-28 are all of the claims currently pending in the present Application.

Claims 13-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Johnson (US 3,213,878) in view of Zoll (US 3,800,825).

Claims 13-28 are the claims being Appealed. These claims are set forth in their entirety in the Appendix below.

**IV. STATUS OF AMENDMENTS**

Claims 13-28 have not been amended subsequent to the Final Office Action of July 21, 2008. Accordingly, the claims stand as presented before the Final Office Action of July 21, 2008.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Appellant's invention, as recited for example in claim 13, is related to a circuit and machine for metering and dispensing fluids. (*See* ¶ [0001])<sup>1</sup>. A problem in the art, as noted in the Appellants' specification, is the formation of deposits and other impurities in the valves of the machines, leading to decreased accuracy and performance. (*See* ¶ [0004]). Additionally, cleaning these related art machines is difficult, complicated and often a time consuming task, as the valves for dispensing the fluids are located within the pump itself. (*See* ¶ [0004]).

Accordingly, Applicants invention is a novel approach to dispensing that allows for reliable and accurate dispensing of fluids, while eliminating the complexities and difficulties associated with the machine's cleaning. (*See* ¶ [0006]-[0008]). More specifically, the dispensing machine in accordance with exemplary embodiments of the present invention includes two one-way valves mounted in series in the output duct of the dispensing machine. (*See* ¶ [0009]).

The two valves are the "first valve," the purpose of which is to act as a stopcock for retaining the fluid during the cleaning or replacement of the "second valve." (*See* ¶ [0010], ¶ [0035]). The second valve is the actual delivery valve. The delivery valve is "mounted in the output duct, outside of the main body, in a position that is easily accessible to the operator." (*See* ¶ [0010]). Accordingly, maintenance of the delivery valve can be performed without the need to

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<sup>1</sup> The citations refer to the paragraph numbers of the present Application as published on December 8, 2005.

dismantle the pump, and without the need to empty the pump of fluid, or to stop the flow of fluid into the pump. (See ¶ [0010]).

In particular, an exemplary embodiment of the fluid dispensing circuit, as described in claim 13, includes a pump comprising a variable-volume chamber and a head. (See ¶ [0021]). The head includes a main body in which an inlet duct and an output duct communicate with said variable volume chamber and wherein a second valve is inserted in said inlet duct and a third valve is inserted in said outlet duct. (See ¶ [0021]-[0022]). Additionally, the delivery duct is connected between the output duct and a nozzle; and the first one-way valve is located along the delivery duct and outside said pump. (See ¶ [0031]). The relationship between the two output valves connected in series is described in claim 14, which requires that the third valve is formed so as to withstand pressures lower than those which cause said first one-way valve to open. (See ¶ [0035]).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

There is only one issue on Appeal. Whether the Examiner has improperly combined Johnson (US 3,213,878) and Zoll (US 3,800,825) to reject claims 13-28 under 35 U.S.C. § 103(a).



## **VII. ARGUMENT**

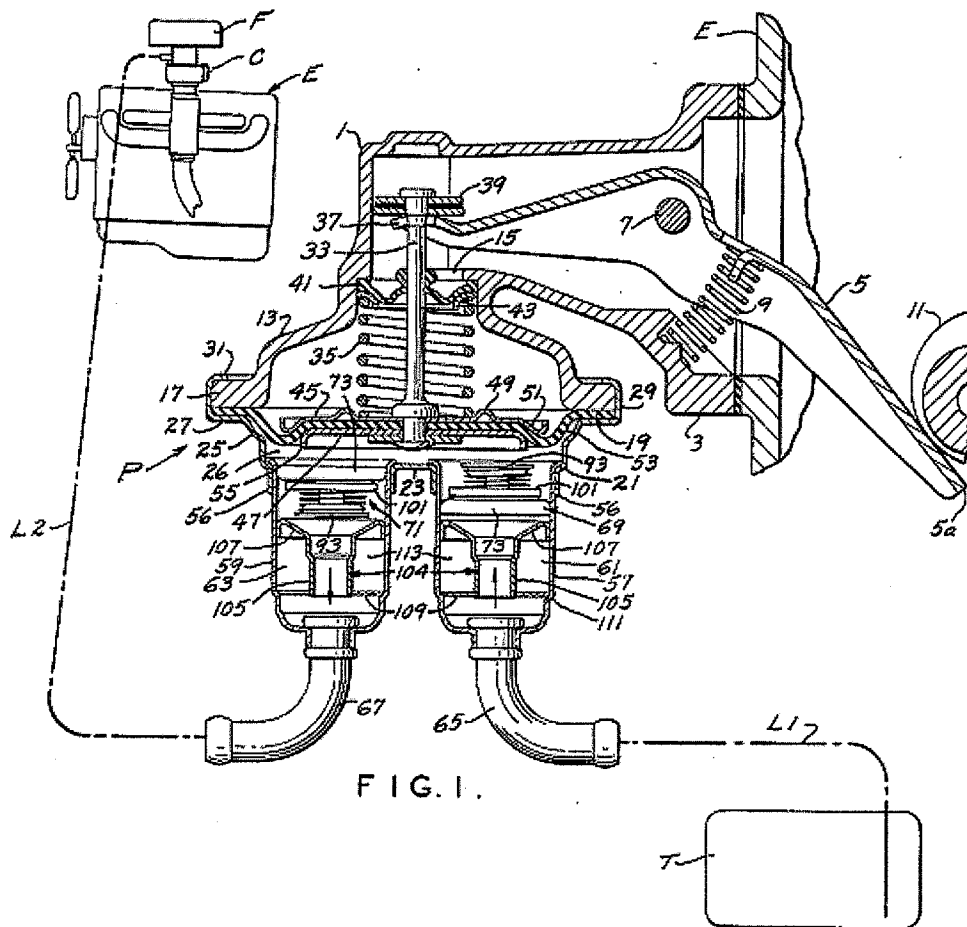
### **I. Claim Rejections Under 35 U.S.C. § 103(a)**

The Examiner has rejected claims 13-28 under 35 U.S.C. § 103(a) as being unpatentable over Johnson (US 3,213,878) in view of Zoll (US 3,800,825). Appellants disagree.

With respect to claim 13, neither reference teaches or suggest, a fluid dispensing circuit wherein “**a second valve** is inserted in said inlet duct and **a third valve** is inserted in said outlet duct; a delivery duct connected to said output duct and a nozzle; **and a first one-way valve** located along the delivery duct and **outside said pump.**”

In other words, in one exemplary embodiment of the present invention, the fluid must pass through two valves before exiting from the nozzle -- the third valve and the first one-way valve. As recited in the specification, in at least one exemplary embodiment, the first one-way valve is located outside of the pump and acts as the main control valve. Conversely, the function of the third valve “is mainly that of a stopcock during maintenance of the delivery valve 14, during which it **prevents the discharge of the fluid that is contained in the bellows chamber 66 and is not subject to pressure.** This avoids the need to dismantle the head 64 each time the delivery valve 14, which is positioned outside the pump 12 in a readily accessible position, is to be cleaned.” (See Page 3, ¶ [0035]). Accordingly, maintenance of the first valve (delivery valve) can be performed without the need to dismantle the pump, and without the need to empty the pump of fluid, or to stop the flow of fluid into the pump. (See ¶ [0010]). For this reason, the first one-way valve is included in the claimed fluid dispensing circuit.

Turning to the cited art of record, Johnson is directed to a "pump for pumping automotive fuel from the fuel tank of an automotive vehicle to the carburetor of the internal combustion engine." FIG. 1 of the Johnson '878 patent is reproduced below.



With respect to FIG. 1, the device in Johnson operates as follows:

In the operation of the pump P on demand for fuel from the carburetor, diaphragm 19 is flexed up and down by the action of cam 11 and spring 35. On an upward (suction) stroke of the diaphragm, the intake check valve 69 opens and the discharge check valve 71 closes, and fuel is drawn into the pumping chamber 26 below the diaphragm. On a downward (discharge) stroke of the diaphragm, the intake check valve 69 closes and the discharge check valve 71 opens, and **fuel is forced out through line L2 to the carburetor.**

Johnson at Col. 4, ll. 62-71 (emphasis added).

The Examiner has recognized that Johnson fails to teach, or even suggest, “**a first one-way valve** located along the delivery duct and **outside said pump**.” Nevertheless, the Examiner relies on Zoll in attempting to cure the deficient disclosure of Johnson. Specifically, the Examiner alleges that one of ordinary skill in the art would add the valve device of Zoll into Line 2 (L2) of Johnson “in order to provide a conventional and cost effective way to allow fluid to be dispensed through the valve.” This reasoning is improper.

Initially, Appellants note that the Examiner’s reasoning presupposes that an additional valve is already included outside the pump of Johnson. Such is not the case. Specifically, the device illustrated in Johnson **does not** include a valve in Line 2. The Examiner’s proposed combination would require for **an additional** valve to be placed after the discharge check valve 71 in Line 2. The Office Action **does not explain, or provide any reason for why one of ordinary skill in the art would add an additional valve to Line 2 of Johnson in the first place**. Nor has the Examiner provided any potential benefit for adding an additional valve (at an additional cost) to the device in Johnson.<sup>2</sup> As recently spelled out in the Supreme Court decision of *KSR International Co. v. Teleflex Inc.*, “rejections on obviousness cannot be sustained by mere conclusory statements; instead, **there must be some articulated reasoning with some rational**

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<sup>2</sup> Appellants also respectfully note that the Johnson device is directed to a fuel pump for use in a vehicle. Because the vehicle’s engine is kept in a confined space, it would be desirable to minimize the number of devices within that space. Conversely, the Examiner proposes adding additional devices to the engine that would provide no additional benefit.

**underpinning to support the legal conclusion of obviousness.**” 82 USPQ2d 1385, 1396 (2007)

(emphasis added).

Furthermore, Johnson teaches away from the combination proposed by the Examiner. That is, Johnson already includes check valve 71 to prevent fuel from flowing through Line 2 until required. In addition, Johnson is concerned with the pressure in the fuel tank and lines (as described above, Johnson states that fuel is “forced” out through Line 2). Accordingly, Johnson provides a pressure relief port 91 in check valve 71, allowing pressure in the pumping chamber 26 to be released into Line 2. If an additional valve was added to Line 2, this valve would effectively eliminate the pressure relieving mechanism of Johnson. It is well known that “[i]t is improper to combine references where the references teach away from their combination.” *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

For at least these reasons claim 13 overcomes the cited art of record. With respect to claims 14-28, these claims depend from claim 13. As such, these claims are allowable at least by virtue of their dependency from claim 13. They are also allowable because of the additional limitations recited therein.

For example, with respect to claim 14, neither reference teaches or suggests, “said third valve is formed so as to withstand pressures lower than those which cause said first one-way valve to open.” In other words, claim 14 is directed to the relationship between the first and third valve.

In fact, the Examiner’s proposed combination **could not** teach this particular limitation. That is, the Examiner relies on Johnson as allegedly disclosing the “third valve” and **admits that**

**Johnson does not teach the claimed “first one-way valve.”** The Examiner relies on Zoll as allegedly teaching the “first one-way valve.” Accordingly, neither reference can claim *a relationship* between the two valves, as these valves are not found within a single reference. The Examiner has not explained why one of ordinary skill in the art, without using the present reference as a blueprint, would set up the valves of Johnson and Zoll according to the claimed relationship. For at least this reason the prior art of record does not teach, or even suggest, the limitations recited in claim 14.

## **II. Conclusion**

For the reasons set forth above, Appellants respectfully request that the members of the Board reverse the rejections of the appealed claims and find each of the claims allowable as defining subject matter that is patentable over the cited art of record.

This Appeal Brief is being filed via the USPTO Electronic Filing System (EFS). Appellants herewith petition the Director of the USPTO to extend the time for filing this Appeal Brief for an appropriate length of time if necessary. Any fee due under 37 C.F.R. §41.37(a) and 37 U.S.C. § 1.17(c) is being paid via the USPTO Electronic Filing System (EFS).

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The USPTO is also directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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**CLAIMS APPENDIX**

**CLAIMS 13-28 ARE THE CLAIMS ON APPEAL.**

*1-12. (canceled).*

13. A fluid dispensing circuit comprising:

a pump comprising a variable-volume chamber and a head;

wherein said head comprises a main body in which an inlet duct and an output duct communicate with said variable volume chamber; and

wherein a second valve is inserted in said inlet duct and a third valve is inserted in said outlet duct;

a delivery duct connected to said output duct and a nozzle; and

a first one-way valve located along the delivery duct and outside said pump.

14. A dispensing circuit according to Claim 13, wherein said third valve is formed so as to withstand pressures lower than those which cause said first one-way valve to open.

15. A dispensing circuit according to Claim 13, wherein said second valve progressively opens during expansion of said variable-volume chamber when fluid is drawn from a reservoir and said third valve is closed.

16. A dispensing circuit according to Claim 15, wherein when a desired amount of fluid has been drawn into said variable-volume chamber, said variable-volume chamber begins contracting, said second valve closes and said third valve opens.

17. A dispensing circuit according to Claim 16, wherein when said third valve opens, fluid passes toward said delivery duct, opens said first one-way valve and continues to said nozzle.

18. A dispensing circuit according to Claim 13,  
wherein said main body delimits the variable-volume chamber at least partially;  
wherein said outlet duct is formed partially inside said main body; and  
wherein said delivery duct extends partially outside said main body.

19. A dispensing circuit according to Claim 18,  
wherein at least one of the one-way valve and third valve comprises  
a hollow body;  
a closure member comprising a flat abutment surface;  
an abutment inside the hollow body comprising the ridge of a knife-edged element  
shaped for bearing against the flat abutment,  
and resilient means associated with said closure member for pressing it against said  
knife-edged element.

20. A dispensing circuit according to Claim 13, wherein a filter is mounted externally  
upstream of the at least one of the one-way valve and third valve.



21. A dispensing circuit according to Claim 19, wherein the at least one of the one-way valve and third valve that is mounted in the output duct comprises a filter.

22. A dispensing circuit according to Claim 19, wherein the at least one of the one-way valve and third valve that is mounted in the output duct comprises a resilient seal interposed between said flat abutment surface and said ridge of the knife-edged element.

23. A dispensing circuit according to Claim 13, wherein said second valve is partially open in the rest position.

24. A dispensing circuit according to Claim 23, wherein said second valve has a travel which is different from the travel of the at least one of the one-way valve and third valve.

25. A dispensing circuit according to Claim 24  
wherein each of said first one-way valve, second valve and third valve comprises  
a hollow body;  
a closure member mounted movably inside said hollow body, wherein said  
closure member comprises a flat abutment surface; and  
an abutment inside said hollow body comprises the ridge of a knife-edged element  
shaped for bearing against said flat abutment surface;

and resilient means mounted between the closure member and the hollow body.

26. A dispensing circuit, according to claim 13, wherein the pump comprise a bellows pump.

27. A machine for dispensing fluids, comprising at least one reservoir of fluids to be dispensed, wherein it comprises at least one dispensing circuit according to any one of claims 13-26, and wherein said pump is connected to the at least one reservoir.

28. A dispensing machine according to claim 27, wherein it comprises a control system for controlling the pump so as to deliver a predetermined quantity of fluid.

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**EVIDENCE APPENDIX**

NONE.

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**RELATED PROCEEDINGS APPENDIX**

NONE.

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Respectfully submitted,



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